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D. F. Costello

University of Nebraska-Lincoln

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SOME THOUGHTS ON THE PHILOSOPHY OF THE FUTURE AND ITS ROLE IN PLANNING

by D. F. Costello, University of Nebraska, Lincoln

Federal, state and local administrative units, both governmental and educational, spend between ten and thirty per cent of their time in planning. By its very nature this planning implies a concern for the future. Many administrators involved find themselves facing the problem of estimating the effect of technological change and future scientific advances on their administrative entities. Recent space activities, the magic sound of the date 2000 and the woeful predictions of modern soothsayers have heightened the administrator's anxiety levels concerning his ability to plan for the changes that will inevitably come. There are some, of course, who see their appointed role as one "guarding the past" and in their zealotry for the past they, by default, choose to ignore the future. That is not to say that we should not study the past, lest we be condemned to repeat it. In this paper we will concentrate on some of the methodology and rationality surrounding the thinking involved in estimating the future with the data of the present.

The problems and, indeed, the underlying philosophies involved in concern for the future are being examined by a number of national as well as international groups. The RAND Corporation has a very active project entitled "Automation and Technological Change." The foundation, Resources for the Future, has been concerned with this area for many years. The University of Toronto has a "Center for Culture and Technology" currently engaged in research in this area. The American Academy of Arts and Science has a "Commission for the Year 2000." Ball State University has an "Institute for the 21st Century Studies." "Mankind 2000" has groups in Vienna, Austria, London, England, and the Hague, Netherlands. One measure of the United States' investment in the future is the \$24 billion investment in R & D in 1968. In fact, it is the size of this expenditure that causes the continuing Congressional concern for partitioning the research dollar among the various allowable alternatives. A recent National Academy of Sciences Report to the Committee on Science and Astronautics of the U.S. House of Representatives (Nat. Acad. Sci., 1969), highlighted the necessity for continuing support of basic research if we are to continue to advance our national goals. This report also contains a recommendation for a more rational partitioning of the available dollars.

Those agencies, whose express purpose is concern with the future, provide some indication of the quality and quantity of thinking that should accompany other types of planning. In particular, these groups agree on the difficulties accompanying the scarcity of the available data, the scarcity of methodology as well as the scarcity of a public commitment to defining long range goals.

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One of the most interesting recent studies concerning the future begins with an examination of the past. Illinois Institute of Technology's project in this area concerned itself with retrospective tracings of the key events which has led to a number of technological innovations. The information developed in these tracings are the basis for considerably better insight into the R & D process. The project graphically pointed out that technological innovation is the final step in a broad pyramid of knowledge in which each research building block plays a necessary and important role. The study confirmed this generally held theory and also provided more specific information on the various mechanisms, institutions, and types of R & D activity required for successful technological innovation.

The study examines tracings in the area of magnetic ferrites, the oral contraceptive pill, the electron microscope, the field of matrix isolation, and the video tape recorder (VTR). (Ill. Inst. Tech., 1968)

If we examine the single development of the video recorder from the point of view of a research planner some very natural questions are raised.

1. When did the realization of the power and value of VTR's first come into being?
2. How and why did the companies, government laboratories and people involved decide to invest their time and money in this direction rather than some other directions which were available to them at the time the decision was made?
3. What expenditure of money and time did it take to accomplish this goal?
4. What increased expenditure of money and time at various key points would have accelerated this development by 5, 10, 15, 100 years?

From this perspective it is natural to ask who and why did the men involved begin to think in terms of planning future goals?

In estimating the future, the planner is continually faced with unsatisfactory amounts and kinds of data. He sometimes attempts to use various statistical techniques similar to those used in business forecasting. He may look at various stochastic models used in time-series analysis, growth processes as well as other more sophisticated multivariate techniques. The longer his time frame the less confident he will be in the reliability of his planning data. Perhaps more important, he is generally uneasy with the necessity to continually violate or stretch the assumptions under which the various statistical models are based. In his thinking, he is forced to use such notions as "intangibles." He often leaves the final thinking to a decision maker who he faithfully believes will interpret the intangibles, fit them into the total picture and make a decision. In the final analysis, perhaps we all expect too much of the decision maker restricted to the use of these techniques. Perhaps the sense of judgement, insight, experience, and broad

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FUTURE EVENT

EDP and Society

Industry

50% reduction of labor force in major industries because of EDP automation

Medicine

Computer as diagnostician (giving reliable results)

Majority of doctors having a terminal for consultation

Control of patients in major hospitals by computer

Education

Instruction at home through computers

Widespread use of Computer Aided Instruction (CAI) in schools

Taxes

Recording of all income by majority of employers on terminals and automatic transfer of this information to various tax authorities

Libraries

Obsolescence of book libraries as known today for general factual information

Traffic Control

Director of large urban traffic flow by computer

Policing of individual vehicles by combined radar detection and computer and computer record of violation (license number, excessive speed, etc.)

Widespread use of automobile autopilots

Air Traffic

Computer controlled commercial airplanes including takeoffs and landings

Private Homes

Computers as common as telephone or television in private homes

68/69

70/71

72/73

74/75

76/78

79/81

82/84

85/88

89/93

94/2000

LATER

NEVER

TABLE 1

understanding we expect from the planner is unreasonable. This is especially irritating to those who are at home with the presumed precision, elaborate care, and dependence on data that characterize more traditional science.

Much planning is based on a type of information coming from judgement, insight, experience, or broad understanding that is generally characterized as "opinion." The RAND Corporation, in an attempt to come to grips with this type of information, developed a questionnaire technique known as the Delphi method (Gordon and Helmer). It is based on the thinking that two heads are better than one, or more generally "n-heads are better than one." Many groups have been using this technique but one that projects future computer developments and applications is particularly interesting (Parsons and Williams). This forecast was the result of two questionnaires circulated to the participants in FILE 68, an international seminar on computer file organization held in Denmark, November, 1968. Table 1 lists some of the items asked while Table 2 summarizes the results of this sample.

Both the IIT (1968) study of the past as well as the Copenhagen study of the future (Parsons and Williams, 1968) view the future as well as the past as somewhat deterministic. That is, the point of view has been, this **was** the past; that **will be** the future. Under a somewhat different assumption, I believe we could characterize certain aspects of the future as not deterministic, but rather that "given enough money, in the broad sense, mankind can be most anyplace and do most anything." In other words, man can still determine his own and his collective future.

In recent times government planners (beginning with the Department of Defense, later extending to all federal agencies by executive order, and now being entertained by various state governments) began using a technique known as Planned Program Budgeting (PPB). This technique is concerned with the major decision making process. Its concentration is on the management functions that precede actual operations. It views an organization performing its function by exercising five basic operations:

- (1) planning
- (2) programming
- (3) budgeting
- (4) operations
- (5) evaluation.

One of the major features of this approach is the identification of major agency objectives with the courses of action selected to achieve those objectives. This feature serves to raise some very basic management questions as to what the agency is trying to achieve.

This major feature of PPB, as well as most other planning techniques eventually raise the eternal question, *Quo Vadus?* – Where are you going? In

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COMPUTER APPLICATIONS

	Mean Year Predicted
1) Direction of large urban traffic flow by computer	1975
2) Control of patients in major hospitals by computer	1976
3) Widespread use of Computer Aided Instruction (CAI) in schools	1978
4) Computer controlled commercial airplanes including takeoffs and landings	1979
5) Recording of scientific and other advances so that constantly updated status is maintained in central files	1983
6) Computer as diagnostician (giving reliable results)	1982-1983
7) Policing of individual vehicles by combined radar detection and computer record of violation (license number, excessive speed, etc.)	1984
8) Majority of doctors having a terminal for consultation	1983-1984
9) 50% reduction of labor force in major industries because of EDP automation	1984
10) Recording of all income by majority of employers on terminals and automatic transfer of this information to various tax authorities	1985
11) Instruction at home through computers	1989
12) Obsolescence of book libraries as known today for general factual information	1992
13) Widespread use of automobile autopilots	1995
14) Computers as common as telephone or television in private homes	1998

TABLE 2

all too many cases, administrative groups feel that speed in getting somewhere is more important than defining the goal towards which one might be striving. Was it not this lack of goal setting on the part of our national governments which led people throughout the world to rise up and set as a national and international goal "the preservation of our environment?" Whether or not those concerned with this goal are making an accurate assessment of the future remains to be seen. Nevertheless, their concern with **goals** and with budgeted programs to achieve these goals is a refreshing breeze in our nation's concern for the future.

In the field of higher education one reads of many studies concerning planning of the future. In one recent study, the members of the Inter-

disciplinary Studies Committee on the Future of Man at the University of Wisconsin reported the results of their investigations into four questions raised by the Board of Regents of the University of Wisconsin (Potter and others, 1970) about the purposes and goals of higher education. They asked, (i) what are the purposes of higher education? (ii) what should be the goals for the University as an entirety? (iii) what should be the goals for each segment of the University? (iv) to what extent should students and student organizations be involved in University Government? In brief, their answer was:

“The primary purpose of the University is to provide an environment in which faculty and students can discover, examine critically, preserve, and transmit the knowledge, wisdom, and values that will help ensure the survival of the present and future generations with improvement in the quality of life.”

This article also remarks that the University should seek incentives and procedures by which future oriented programs would be encouraged. They recognized that the University, as well as all government agencies, are under tremendous pressure to solve current problems, but emphasized that the University by its very nature must be future-oriented because it is responsible for the joint effort by which faculty and students provide knowledge, skills, and social values for much of the leadership of the next generation.

They affirmed that the University faculty members have an obligation to identify the orientation of their search for truth in terms that are explicit and meaningful. It is possible to be explicit about the orientation with respect to the future, while at the same time being open-minded as to the means or the possibility of different individual orientations.

They expressed a belief in the fact that the University has an obligation to examine and preserve the value judgements that can elevate the condition of the society on which it depends. What is perhaps the most important aspect in these and many other recent goal searching exercises is the growing realization with the poet John Donne that, “No man is an island entire of himself, every man’s death diminishes me . . . for I am involved in mankind.”

This approach to the concept of goals and the interinvolvement of men in goal seeking is discussed by the anthropologist, Pierre Teilhard de Chardin (1964). Chardin also begins with the past and asks, “What is the difference between ourselves, citizens of the twentieth century, and the earliest human beings . . . ? In what respects may we consider ourselves their superiors and more advanced than they?”

He answers this question with:

“Organically speaking, the facilities of those remote forebears were probably the equal of our own. By the middle of the last Ice Age, at the latest, human groups had attained to the expression of aesthetic powers calling for intelligence and sensibility developed to a point which we have not surpassed. To all appearance the ultimate perfection of the human

element was achieved many thousands of years ago, which is to say that the individual instrument of thought and action may be considered to have been finalized. But there is fortunately another dimension in which variation and growth are still possible, and in which we continue to evolve.

The great superiority over Primitive Man which we have acquired and which will be enhanced by our descendents in a degree perhaps undreamed of by ourselves, is in the realm of self-knowledge; in our growing capacity to situate ourselves in space and time, to the point of becoming conscious of our place and responsibility in relation to the Universe."

In answer to the question as to whether we claim to be more moral than our fathers, he answers no, but explains:

"Because, owing to the progress of science and thought, our actions today, whether for good or ill, proceed from an incomparably higher point of departure than those of the men who paved the way for us toward enlightenment. When Plato acted it was probably in the belief that his freedom to act in the knowledge that the choice he makes will have repercussions through the countless centuries upon centuries and upon countless human beings. He feels in himself the responsibilities and power of an entire Universe."

In examining futuristic type planning sessions, this new concern for goals and their setting in the framework of interinvolved men and nature is all pervading. Undefined "progress" is no longer what people look for. Progress is not ease, well-being, or peace. It is a force. It is the force of the consciousness of all that is and that can be. Chardin explains that this force attracts man irresistibly towards science. Despite the recent condemnations of science, instinct tells us that "to be faithful to life, we must know; we must know more and still more; we must tirelessly and unceasingly search for Something . . ."

Chardin's view of the philosophy of the future emphasizes the central role of the individual and his relation to Mankind. In recent years we have witnessed many social, economic and political philosophies that de-emphasize the individual man and his role in society. Some of these philosophies concentrate on a future (the 1000 year Reich, the dictatorship of the proletariat) in which Utopian condition will exist for man but insist in certain expedient policies that must exist during the periods preceding the Utopian ideal.

Family planners, environmental planners, military planners, educational planners, political planners, all demonstrate a thirsty interest in the future. They look to the past and attempt to gain insight into predicting the future. They sometimes wed themselves to the new Sorcerer's apprentice, the digital computer, and kneel and pray that the oracle help them in their viewing of the future.

Let me suggest that each of us need to sharpen our philosophical

underpinnings while we look to the future. I would suggest that we remain centered in our concern for the individual rather than collective man and urge, paraphrasing Alexander Pope, that the proper future of Mankind is Man.

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